Microfinance as a Tool for Small Business Growth in Urban Ghana

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Abstract
While a number of studies have shown evidence of positive impact of microfinance on the growth of small businesses, others have shown evidence of microfinance worsening the plight of small businesses by exacerbating their indebtedness. It is in the light of these conflicting views that this study sought to investigate the role of microfinance in promoting the growth of small business in Ghana. Microfinance in Ghana provides a great potential to support economic activities of small businesses. This study therefore, examined the impact of microfinance on the growth of small businesses in urban Ghana. It used responses to structured and unstructured questionnaire elicited from a cluster sampling of 213 clients from 58 microfinance institutions (MFIs) in the Ashanti and Greater Accra regions, the two most urbanized regions of Ghana. Multiple and logistic regression analyses showed that the increase in business profits, stock and business assets after the acquisition of microfinance loans were statistically significant, indicating that the loan amount had significant impact on profit levels, stock adjustments, and acquisition of business assets. However, the change in employment was statistically insignificant. The study recommends the development of appropriate loan products and services that meet the needs of small business operators to sustain and enhance the growth of their businesses.

Keywords: Microfinance, Small businesses, Profits, Stock, Business Assets, Employment, Ghana.

1. Introduction
It has been acknowledged that small and medium enterprises (SMEs) play an important role in transition and developing countries (OECD, 2004; Iraj and Besnik, 2011). The growth of SMEs is therefore seen as a key condition in promoting equitable and sustainable economic development in Africa (Kufuor 2008). Such growth contributes to the production of goods and services that meet the basic needs of the poor (Cook and Nixon, 2005), creates employment and entrepreneurship (Abor and Quartey, 2010; Edmiston, 2004), improves income distribution, and facilitates poverty reduction (OECD, 2004).

In Ghana SMEs are a major source of employment and income for the rural and urban growing labour-force, accounting for about 92% of all enterprises in the country (Kayanula and Quartey, 2000). Small businesses thus, make up the largest portion of the employment base and are the bedrock of the local private sector (Kufuor, 2008).

While the important role of SMEs to the economic development of emerging economies has been acknowledged by recent research (Patricoff and Sunderland, 2005; Raynard and Forstater, 2002), their development is hampered by a lack of adequate financial resources (Carpenter, 2001). A study of SMEs in five African countries by Parker et al. (1995) revealed that about 90 percent of small enterprises surveyed cited credit as a major constraint to new investment. Finance is critical for the development of SMEs (Cook and Nixon, 2000) and lack of it stifles SMEs growth and entrepreneurship (Newberry, 2006). A significant number of SMEs in Ghana and other emerging economies do not have access to adequate and appropriate forms of credit and equity (Parker et al., 1995; Mensah, 2004). This situation impedes their contribution to economic development in such countries.

It is to address the problem of inadequate finance that microfinance institutions (MFIs) have emerged to provide financial services to SMEs, focusing on poverty reduction and the economic survival of the poor (Afrane, 2002). Microfinance involves the provision of a broad range of financial services including loans, savings, money transfer, and micro insurance to poor households (CGAP, 2009) to enable them to engage in productive economic activities (Adjei, 2010). Littlefield (2005) argued that access to credit enables poor people to set up their own businesses, educate their children, meet their health care needs and improve their livelihood. These outcomes underscore the growing importance of microfinance as an essential poverty alleviation mechanism (Khandker, 2005; Brau and Woller, 2004; Chowdhury et al, 2005).

Since MFIs aim at improving the socio-economic lives of their clients, impact assessment would provide them an opportunity to know whether or not they are achieving this aim. Assessing impact is also necessary because development agencies, foundations and governments seek to ensure that funds are well spent. Additionally, the microfinance programme impact can be validated externally for continuity in intervention. Furthermore, the effectiveness of microfinance can be compared with the rate of return on alternative uses, which will invariably contribute to efficient allocation of resources (Khalily, 2004; Hulme, 2000).

Recently, the government of Ghana has shown increasing interest in microfinance because of its potential to help reduce poverty. This followed from the government’s commitment to achieving the now defunct
Millennium Development Goals (MDGs). It appears to have become evident to the government of Ghana that a robust and sustainable microfinance industry presents an effective vehicle for reducing poverty, empowering women and attending to the welfare of households (Adjei, 2010).

As a contribution towards assessing the effectiveness of the microfinance industry in Ghana, this study examines the impact of microfinance on the growth of small businesses in urban Ghana. The outcome of this study would therefore add to the literature on impact assessment and would arguably confirm the benefits or otherwise of microfinance. The following section of the paper reviews the literature on the impact of microfinance on beneficiaries. This is followed by the research methodology. The findings of the research are then presented and discussed. The paper ends with a conclusion and policy implications.

2. Literature Review
This section gives a background of microfinance in Ghana and discusses the empirical evidence of the impact of microfinance on small businesses.

2.1 Background of Microfinance in Ghana
Over the past few decades, microfinance in Ghana was provided by three main types of microfinance institutions (MFIs). These were formal providers (rural and community banks, savings and loans companies), semi-formal (credit unions, financial non-governmental organizations and co-operatives), and informal providers (susu collectors and clubs, rotating and accumulating savings and credit associations) (Asiamah and Osei, 2007; GHAMFIN, 2008).

The microfinance industry previously dominated by unregulated providers attracted the attention of the formal financial institutions such as the commercial banks, following the success of the informal institutions in providing finance to the small business sector. Many of the commercial banks in Ghana now have microfinance units which provide microfinance for the growth of small businesses, and some of them employ the “susu” methodology in their microfinancing.

Realizing the positive impact of microfinance in poverty alleviation and hence in nation building, the government of Ghana implemented a number of programmes to promote microfinance. One of such programmes is the Micro Finance and Small Loans Centre (MASLOC). MASLOC was established in 2006 to manage microfinance schemes introduced under the second phase of Ghana’s Poverty Reduction Strategy to promote the private sector. High default rate in loan repayment is however, crippling the scheme and denying other small-business operators access to credit (Domfeh, 2010). The government of Ghana through the then Ministry of Women and Children’s Affairs (MoWAC) also provided microfinance to poor women to help finance their micro and small-scale enterprises. MoWAC established the Women’s Special Microfinance Fund with assistance from the Japanese government. The fund aimed at helping in the development of women-owned enterprises, especially those in rural and deprived areas. The fund was disbursed through some of the commercial banks, rural and community banks (RCBs) and other microfinance institutions at special interest rates to ensure sustainability of the fund (Adjei, 2010).

However, with the proliferation of MFIs in Ghana, the need to ensure financial system stability and safeguard the deposits of the customers of MFIs (Christen, Lyman and Rosenberg, 2003; Arun, 2005) became very pressing. This prompted the Central Bank to initiate a process of regulating the activities of MFIs in 2011. This action led to the restructuring of the microfinance sub-sector into tiers for the efficient running of the sector (Bank of Ghana, 2011). Microfinance institutions which fall under tier 1 are the rural and community banks (RCBs), finance houses and savings and loans companies. Tier 2 MFIs consist of susu companies (now referred to as microfinance companies) and financial non-governmental organizations (FNGOs) that are deposit taking and profit making. Money lenders and FNGOs that do not take deposits fall under tier 3 while susu collectors fall under tier 4 (Bank of Ghana, 2011). This study uses clients of tier 1 and tier 2 MFIs to assess the impact of microfinance. This is because tier 1 and tier 2 MFIs are expected to accept deposits and also give out credits, which is the focus of this study. Tier 3 MFIs are not allowed to accept deposits although they can give out credit.

2.2 Empirical Studies on the Impact of Microfinance on Small Businesses
The interest in microfinance as a development tool that seeks to alleviate poverty has called for a number of impact assessments of MFIs’ programmes. Researchers and practitioners of microfinance have therefore investigated the impact of MFI programmes on the lives of their clients in such areas as income, employment, acquisition of business assets, education, nutrition, health and gender equity (Coleman, 2006; Banerjee et al, 2009; Mckenzie and Woodruff, 2008; Karlan and Zinman, 2009; Remenyi and Quinones, 2000; Fosu, 2008). Studies on impact assessment show mixed results. While some argue that microfinance has a positive impact on the lives of the beneficiaries (Khandker,1998; 2005; Remenyi and Quinones, 2000; Zaman, 2000; Otero and Rhyne, 1994; Wright, 2000; UNICEF, 1997) others caution against such optimism and draw attention to the negative impacts that microfinance can have (Mallick, 2002; Rogaly, 1996). A third category of research work located between these two views, identifies the beneficial impacts of microfinance and argues that it does not
help the poorest as claimed (Hulme and Mosley, 1996) or that the poorest are deliberately excluded from microfinance programmes (Simanowitz, 2000). Some of the empirical studies are reviewed below.

De Mel, McKenzie and Woodruff (2008) researched into return to capital in micro enterprises in Sri Lanka and report that average profits of microenterprises increase more than 5 percent per month or at least 60 percent per year. They however, note that returns are higher for recipients with more entrepreneurial ability. Investigating the effect of microcredit on small business investment in Manila, the Philippines, Karlman and Zinman (2009) in a randomized study also found that profits from business increased especially for male and higher-income entrepreneurs. Profits increase more seriously in households with above median income. They however, found no significant effect on household incomes and poverty. Contrary to the findings of de Mel et al (2008), Priya (2006, cited in Adams and Bartholomew, 2010) reports a significant positive relationship between credit recipients and income. According to the study programme participation led to a 10 percent increase in income.

Banerjee, Duflo, Glennerster, & Kinnan, (2008) also carried out a randomized study on the impact of microfinance and report that the estimated effects of access to microfinance on business profits, monthly business evenness, and spending on business inputs were all positive, although not statistically significant. Estimated business profit in treated neighborhoods was 1,025 rupees compared to 550 rupees in the control neighborhoods. The estimated monthly input spending was 18 percent higher in treatment areas, and estimated monthly business revenue was 20 percent higher. Using a quasi-experimental setting in evaluating the impact of microfinance in Northeast Thailand, Coleman (2006) finds that microfinance has a positive impact on the more wealthy borrowers than the target group of the “poorest of the poor”. He argued however that Thailand is not a typical environment for the evaluation of microfinance because of its overall relative wealth and the widespread availability of credit. Using regression analysis, a related study by Dunn (2005) on the impact of microfinance found evidence for increases in income, employment and wages.

Another study that found evidence of positive impact of microfinance on business profit and household income is that of Copestake, Bhalotra and Johnson (2000). They report of higher average growth in profits and household incomes, but such growths were associated with those who obtained a second or more loans. Nanor (2008) also investigates the impact of microfinance on four districts in Ghana and found evidence of a positive impact of microfinance on household income and business profits of clients in two out of the four districts surveyed but found no significant impact in the other two districts. He attributed the insignificant impact to the small loan sizes which was too small to cause a real change in incomes and profits of beneficiaries. However, contrary to the findings of Copestake et al (2000), Nanor (2008) found evidence of clients’ profits getting worse as they stayed longer on the credit scheme.

In a case study of the impact of microfinance on rural women farmers in Ghana, Effa and Herring (2005) report that rural women who participated in the MFI’s programme gained an increase in income and savings compared to those who did not. Clients also adopted agricultural innovations at a significantly higher rate than non-clients. Fosu (2008) in another study on impact assessment of financial NGOs in Ghana finds evidence that 70 percent of clients increased their capital and stock as a result of loans given to them to start or expand their businesses, 24 percent had increases in their profit level, 32 percent had expanded their businesses and 6 percent did not experience any change in their businesses. She concludes that even though a greater percentage of the beneficiaries had found the intervention to be of benefit to them, some felt worse off due to the inadequate loan sizes and stringent loan terms. A study by Afrane (2002) on the impact of two microfinance institutions in Ghana and South Africa also revealed a positive impact on the businesses of the clients of the two MFIs. Using turnover as a proxy for income and profit, the findings show that the businesses of clients in both projects increased significantly after the disbursement of the loans. On the average the turnover of clients of Snapi Aba Trust (SAT) from Ghana and Soweto Microenterprise Development (SOMED) from South Africa, increased by 157 percent and 118 percent respectively. However, 12 percent of the eighty-two sampled enterprises in South Africa recorded negative growth.

Adjei et al (2009) in a study on microfinance programmes and the poor also report that a greater percentage of the Snapi Aba Trust (SAT) microfinance programmes (46 percent) went to the less poor, while 39 percent went to the moderately poor and 15 percent benefited the very poor. The results of the study indicate that SAT microfinance programmes target a disproportionately smaller proportion of the very poor in its operational areas. This is not surprising since SAT aims at providing both financial and non financial services to the economically active poor for enterprise development and income generation. This finding supports other studies which argue that most MFIs tend to serve the moderately poor and not the poorest of the poor (extremely poor) (Montgomery and Weiss, 2005; Hashemi and Rosenberg, 2006).

While studies reviewed above suggest a positive impact of microfinance on profits, income, business assets, wages and employment, Bateman (2007) argues that microfinance activities did nothing to alleviate poverty or worsened it. Mallick (2002) also asserts that participation in microfinance programme sometimes worsen rather than improve the economic conditions of the clients. Too much pressure from group members to pay promptly
often compelled participants to resort to moneylenders to pay off their debts. Some rather tend to be worse off or poorer than they used to be. This is supported by a study by Coleman (2001) which reveals the negative impact of microfinance on household wealth. According to him, clients are given small loan sizes which are too small for investment purposes. Such clients use the loans for consumption instead of investing and end up falling on moneylenders to finance the repayment (robbing Peter to pay Paul syndrome). The study by Copestake et al (2000) also report of some borrowers being made worst off as a result of inflexible group enforcement of loan obligations. Afrane (2002) also asserts that pressure of time resulting from increased business activities worsen family relations.

Microfinance, although acclaimed by many as able to improve upon the lot of poor people (Littlefield, 2005; Zaman, 2000) may not be a panacea for poverty but a component for the fight against poverty (Remenyi, 2000). In the light of this, Robinson (1998) argues that the “poorest of the poor” do not need credit but have prior needs such as food, health services and other basic requirements which have to be met by the government. Microfinance can therefore, be more effective when given to the poor who could make good use of the loans and not spend them on basic needs.

3. Methodology
A mixed research design was employed comprising both quantitative and qualitative approaches. This allowed for effective triangulation of the findings for rigor. Three main data collection instruments were employed: questionnaire (structured and unstructured), interviews and focus group discussions. The focus group discussions enabled respondents to confirm responses to the questionnaire.

In assessing the impact of microfinance, Banerjee et al (2008); Kondo (2007) and Coleman (2006) suggest the use of new (entrants) clients in a MFI to serve as a control group since they are yet to be given credit, while the regular clients would be the treatment group. Interviews with some of the MFI managers revealed that it is almost impossible to find a client who has not received any credit from another MFI, so that a control group was difficult to delineate. In view of this, the study adopted the “before and after” method where clients were interviewed based on their situations before they contracted the loan and the changes that occurred after the loans. This presented a major limitation to the study. Steps were however, taken to minimize the propensity of inaccurate information by having well trained and equipped interviewers to carry out the interviews in an efficient manner.

3.1 Study Area
The Ashanti and Greater Accra Regions of Ghana have 18.4 percent (2.8 million) and 34.4 percent (3.6 million) respectively of their populations engaged in wholesale and retail trade, the sector that has most of the micro and small business operators. Kumasi metropolis, the capital of the Ashanti Region for instance has about 71 percent of its population engaged in commerce while 12.2 percent and 16.7 percent of the population of the Ashanti and Greater Accra Regions respectively are in manufacturing (Ghana Statistical Service, 2012; KMA, 2014; Ghana District Repository, 2006, cited in Mabe et al, 2013). The high urban populations in the two regions have attracted a lot of MFIs who provide financial and non-financial services to small businesses. The study therefore sought to find out how microfinance activities have led to the growth or otherwise of the small businesses.

3.2 Sampling and Data Collection Procedures
The survey was based on MFIs established before 2012. These MFIs were therefore, targeted to ascertain their impact on small businesses up to date. Small business operators who are clients of both rural banks (tier 1) and microfinance companies (tier 2) in Ashanti and Greater Accra regions were the population for the study. Ashanti Region has a total of 23 rural banks. However, 21 of the rural banks consented to have their clients interviewed. A maximum of 4 clients randomly sampled from each of the 21 rural banks were provided by the banks for interview. A total of 74 clients of rural banks were therefore interviewed. While the rural banks are scattered throughout the region, the microfinance companies are concentrated in the Kumasi metropolis. A total of 38 microfinance companies were established before 2012. The microfinance companies were put into 5 clusters based on geographical location and the first 4 companies in each of the clusters were selected. In all 20 microfinance companies were selected. Each of the microfinance companies provided a maximum of 4 clients who were randomly sampled to be interviewed.

Greater Accra Region had 7 rural banks scattered throughout the region. Four of the rural banks were selected based on simple random sampling. One declined and three rural banks provided a maximum of four clients each for interview. Greater Accra Region had about 115 microfinance companies. The microfinance companies were grouped into 5 clusters based on geographical location and the first 4 companies in each of the clusters were selected, making a total of 20 microfinance companies. However, 14 companies out of the 20 allowed their clients to be interviewed. Each of the 14 companies provided a maximum of 4 clients randomly sampled to be interviewed. The total number of clients interviewed were therefore 213, made up of 82 and 131
rural bank and microfinance company clients respectively.

Two focus group discussions were also held for 24 clients (12 in each group) of the MFIs who were not involved in the initial interviews held. The focus group discussions provided opinions and feelings about the impact of the MFIs’ programmes on small businesses in an unrestrained way not captured in the quantitative data.

3.3 Sample Characteristics of Respondents
Out of the 213 respondents, 133, representing about 62 percent, were females while the remaining were males. About 90% of the respondents were aged between 25 and 55 years with the highest age group being 35 – 45 years (i.e. 37%). Although 67.5% had secondary school education, only 4.7% had completed secondary school certificate, while 10.8% had tertiary education. Close to three-quarters (71%) of the sample were involved in trading while 23.5% provided services. The primary and manufacturing sectors were least represented in the sample. The majority of businesses (54%) had been in existence for 9 or more years.

3.3.2 Independent Variables

The independent variables are age and gender of firm owners as well as loan received and the type of MFI which employed after the loan.

3.3.3 Dependent Variables

The dependent variables are therefore, profit, stock of goods, business assets and employment.

3.4 Variables and their Description

3.4.1 Dependent Variables

A number of variables can account for the growth of small businesses. This study focuses on four variables, namely; profit, stock of goods, business assets and employment that can contribute to the growth of small businesses and investigate how financial assistance from MFIs can enable the growth of these businesses through the four variables. The dependent variables are therefore, profit, stock of goods, business assets and employment.

Profit is calculated by subtracting the cost of operations from sales of the small businesses. It is expected that the four variables. The dependent variables are therefore, profit, stock of goods, business assets and employment that can contribute to the growth of small businesses.

The independent variables are age and gender of firm owners as well as loan received and the type of MFI which employs after the loan.

Stock of goods measures the amount of goods clients are able to acquire with the loans given to them by the MFIs. Business Assets are assets the business operators acquired with the loans given by the MFIs. Employment is coded as 1 for those firms that employed after receiving the loan and 0 for those who did not employ after the loan.

3.4.2 Independent Variables

The independent variables are age and gender of firm owners as well as loan received and the type of MFI which gave out the loans. Age shows the number of years of the business owners. Gender is coded 1 for male and 0 for female. With the type of MFI, MFIs under tier 1 are coded 1 while MFIs under tier 2 are coded 0. Rural banks have been under regulation since their establishment in 1976. Microfinance companies on the other hand came under regulation in 2012 when the government saw the need to regulate the whole microfinance subsector.

3.4.3 Analytical framework

The financial services provided by the MFIs are expected to enable the growth of small businesses. This study looks at four areas in which the provision of loans can help small businesses to grow. These are, replenishing the stock of goods sold, acquisition of business assets, employing more people and earning profits from business operations. The study thus, regresses the independent variables, namely, age and gender of firm owners, loans received and MFI type on each of the dependent variables, namely, profits, stock of goods, business assets and employment to assess the impact of the independent variables on each of the dependent variables. The study also found out whether Stock of goods sold (SOG) had an effect on profit; whether profit had an effect on stock of goods sold; whether profit and stock had an effect on business asset; whether stock of goods sold had an effect on employment.

The study used multiple linear regression model and parameters are estimated by Ordinary Least Square (OLS) method as:

\[ \text{Profit}_i = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + \beta_4 \text{Loan}_i + \beta_5 \text{MFI Type}_i + \beta_6 \text{SOG}_i \]

\[ \text{SOG} = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + \beta_4 \text{Loan}_i + \beta_5 \text{MFI Type}_i + \beta_6 \text{Profit}_i + \beta_7 \text{SOG}_i + \beta_8 \text{SOG Squared}_i + \beta_9 \text{Profit Squared}_i \]

\[ \text{Business Asset}_i = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + \beta_4 \text{Loan}_i + \beta_5 \text{MFI Type}_i + \beta_6 \text{Profit}_i + \beta_7 \text{SOG}_i + \beta_8 \text{SOG Squared}_i + \beta_9 \text{Profit Squared}_i + \beta_{10} \text{Employment}_i \]

\[ \text{Employment}_i = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + \beta_4 \text{Loan}_i + \beta_5 \text{MFI Type}_i + \beta_6 \text{SOG}_i + \beta_7 \text{SOG Squared}_i + \beta_{11} \text{Profit}_i + \beta_{12} \text{Profit Squared}_i + \beta_{13} \text{Employment}_i \]

Where, \( i \) represent an MFI firm, SOG represent stock of goods. Models (1) to (3) were estimated using OLS estimator. Model (4) however was estimated using the maximum likelihood estimator given that it is a logistic regression. The variable Employment is a dummy variable.

4. Results and Discussion

In running the regression, the variance inflating factor (VIF) for all the explanatory variables were estimated to assess multicollinearity. Table A presents the VIF values for all the explanatory variables in the three regression models. VIF is often used to detect the presence of Multicollinearity in a regression. The rule of thumb is that, a
VIF higher than 10 is regarded as excessive and poses serious threat to the reliability of the regression results. The VIF values reported in Table A are all less than 10. Thus some of the explanatory variables are correlated but the extent of the correlation should not cause serious multicollinearity issues. The maximum VIF recommended in literature is 10 by Hair, Anderson, Tatham and Black (1995). The rule of thumb is that, a VIF higher than 10 is regarded as excessive and poses serious threat to the reliability of the regression results. The VIFs for all the variables were less than 10, therefore multicollinearity was minimal. Thus, while some of the explanatory variables are correlated, the extent of the correlation should not cause multicollinearity issues.

Table 1: Variance Inflation Factor

<table>
<thead>
<tr>
<th>Variable</th>
<th>Business Asset</th>
<th>Profit</th>
<th>Stock of Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock of Goods</td>
<td>8.56</td>
<td>6.14</td>
<td>-</td>
</tr>
<tr>
<td>Stock of Goods Squared</td>
<td>7.33</td>
<td>5.7</td>
<td>-</td>
</tr>
<tr>
<td>Profit Squared</td>
<td>3.43</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Profit</td>
<td>2.87</td>
<td>-</td>
<td>1.25</td>
</tr>
<tr>
<td>Loan</td>
<td>1.44</td>
<td>1.37</td>
<td>1.28</td>
</tr>
<tr>
<td>Gender</td>
<td>1.15</td>
<td>1.1</td>
<td>1.11</td>
</tr>
<tr>
<td>Type</td>
<td>1.07</td>
<td>1.07</td>
<td>1.05</td>
</tr>
<tr>
<td>Age</td>
<td>1.04</td>
<td>1.03</td>
<td>1.03</td>
</tr>
<tr>
<td>Education</td>
<td>1.03</td>
<td>1.02</td>
<td>1.03</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>3.1</td>
<td>2.49</td>
<td>1.13</td>
</tr>
</tbody>
</table>

The Breusch-Pagan test of heteroskedasticity was also used for all the variables. The null hypothesis that the variance of the error terms was constant against the alternative of unequal variance was examined. From the results, the null hypothesis was rejected indicating heteroscedasticity. To correct for this, the White robust standard error was used in the regression analysis (White 1980).

Table 2: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

<table>
<thead>
<tr>
<th>Profit</th>
<th>Business Asset</th>
<th>Stock of Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>chi2(1)</td>
<td>31.62</td>
<td>2650.59</td>
</tr>
<tr>
<td>P-value</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Table 2 presents the tests for heteroskedasticity for all three models. The null hypothesis that the variance of the error terms was constant against the alternative of unequal variance was examined. Only by rejecting the null hypothesis could there be heteroskedasticity problem. From the results, all the null hypotheses were rejected given that their respective p-values were less than 0.05. To correct for this, the White robust standard error was used in all the three regression models.

The regression results are discussed under four main areas: effect of microfinance on profits, stock of goods, business assets and employment. The null hypothesis tested in each case was that there is no difference between the variable of interest before and after loan acquisition.

4.1 Effect of loan on Profit

Table 3 : Regression Result of the Effect of Loans and Other Variables on Profit

<table>
<thead>
<tr>
<th>Profit</th>
<th>Coefficient</th>
<th>Robust Std. Err.</th>
<th>t</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>16.5902</td>
<td>204.219</td>
<td>0.08</td>
<td>0.9350</td>
</tr>
<tr>
<td>Gender</td>
<td>265.9384</td>
<td>113.962</td>
<td>2.33</td>
<td>0.0210</td>
</tr>
<tr>
<td>Age</td>
<td>-21.87427</td>
<td>18.55506</td>
<td>-1.18</td>
<td>0.2400</td>
</tr>
<tr>
<td>Education</td>
<td>71.2493</td>
<td>44.2067</td>
<td>1.61</td>
<td>0.1090</td>
</tr>
<tr>
<td>Loan</td>
<td>0.0129818</td>
<td>0.0056131</td>
<td>2.31</td>
<td>0.0220</td>
</tr>
<tr>
<td>Type of MFI</td>
<td>-36.81721</td>
<td>103.8569</td>
<td>-0.35</td>
<td>0.7230</td>
</tr>
<tr>
<td>Stock of Goods</td>
<td>0.0418556</td>
<td>0.0085485</td>
<td>4.9</td>
<td>0.0000</td>
</tr>
<tr>
<td>Stock of Goods Squared</td>
<td>-1.72E-07</td>
<td>3.44E-08</td>
<td>-5.01</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Observations = 212
F(7, 204) = 11.57
P-value = 0.000
R-squared = 0.3523
Root MSE = 725.81

Table 3 illustrates the multiple regression result that assessed the impact of age and gender of firm owners on the profit of the firm. It also examined the impact of loan received and the type of MFI which granted the loan on profit. Since stock of goods sold can influence profits, an assessment of the influence of stock of goods sold on profit was also made. From the results, the F-statistic was 11.57 with p-value of 0.000 < 0.05, indicating that at least one of the independent variables statistically influenced profit. The R-square was 0.3523 which means that, 35.23 percent of the variation in profit was explained by the model.

On the significance of each individual independent variable, the estimated coefficient of gender was
265.9384 with a p-value of 0.0210 < 0.05 (gender is a dummy variable coded 1 for male owners and 0 for female owners). This implies that, profit of male firm owners were statistically higher than that of female firm owners. Information from the sample characteristics indicates that 62 percent of the respondents were female. The study however, found out that the male owners went in for relatively bigger loans than their female counterparts. This might have accounted for the relatively higher profits of male owners than female owners.

Age on the other hand, had an estimated coefficient of -21.87427 with P-value of 0.016 < 0.05, indicating that age of the firm owner negatively influence their profitability. Education however failed to significantly influence the profitability of the firms. The coefficient of Loan was 0.0129818 with p-value of 0.0220 < 0.05. This implies that, the size of loan received positively and significantly improves profitability. *Stock of goods also had an estimated effect of 0.0418556 with p-value of 0.000 < 0.05. This means SOGs positively and significantly influences the profitability of the firms. The findings are consistent with other studies (Copestake et al. 2000; Nanor, 2008). Type of MFI however, failed to significantly influence profit of the firms.

Increase in profits notwithstanding, clients bemoaned the high interest rates of about 48 to 80 percent they pay annually on loans. This according to them reduces their profit levels drastically. One participant of the focus group discussion for instance lamented: “I cannot do without the MFIs, they have made me what I am today, but their high interest rates are having adverse effects on my profits.” Another one complained “I only work for the MFIs, I use almost all my profits to repay loans and this is affecting my business.”

4.2 Effect of loan on Stock of goods
Table 4 shows the effect of the loans received on the stock of goods. The results show the estimated F-statistic to be 3.31 with its p-value of 0.004. This implies that, at 5 percent level of significance, at least one of the independent variables significantly influences stock levels. The coefficient of loan, which is 0.3518118 with a p-value of 0.006, is statistically significant, implying that, the size of loan received positively and significantly influences the stock of firms. This means a 1 Ghana cedi increase in loan translates into a 0.35181 increase in stock. There was also an assessment of profit on stock of goods sold. The results show that profit has a statistically significant influence on stock level, given its coefficient of 5.6824 and its P-value of 0.001 < 0.05. This means that, profit of the firms positively and significantly influences their stock level. The evidence support other studies (Fosu, 2008). None of the other variables were significant.

### Table 4: Regression Result of the Effect of Loans and Other Variables on Stock of Goods

<table>
<thead>
<tr>
<th>Stock of Goods</th>
<th>Coefficients</th>
<th>Robust Std. Error</th>
<th>t</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-2457.127</td>
<td>5733.273</td>
<td>-0.43</td>
<td>0.669</td>
</tr>
<tr>
<td>Gender</td>
<td>-4685.957</td>
<td>2832.86</td>
<td>-1.65</td>
<td>0.1</td>
</tr>
<tr>
<td>Age</td>
<td>475.4415</td>
<td>498.871</td>
<td>0.95</td>
<td>0.342</td>
</tr>
<tr>
<td>Education</td>
<td>551.2048</td>
<td>1122.312</td>
<td>0.49</td>
<td>0.624</td>
</tr>
<tr>
<td>Loan</td>
<td>0.3518118</td>
<td>0.1264042</td>
<td>2.78</td>
<td>0.006</td>
</tr>
<tr>
<td>Type</td>
<td>-527.7089</td>
<td>2754.483</td>
<td>-0.19</td>
<td>0.848</td>
</tr>
<tr>
<td>Profit</td>
<td>5.682399</td>
<td>1.649335</td>
<td>3.45</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Observations = 212
F(6, 205) = 3.31
P-value = 0.004
R-squared = 0.1398
Root MSE = 18978

Generally, the initial evidence of access to loans is the increase in stock of goods. This was confirmed by the focus group discussions where all participants allude to increase in stocks of goods as a result of access to loans. One of the participants, a tailor, testified that he was able to buy more materials for his tailoring business as a result of access to loans which ultimately increased his productivity. However, some complained of the small size of loans, which did not help to increase their stock of goods appreciably. Commenting on the small size of loans, Coleman (2001) argued that small sizes of loans may be too small for investment purposes and may not have a positive impact on the growth of small businesses. The irregular energy supply in Ghana was also mentioned as having a negative effect on their stock of goods, especially those who trade in frozen goods (like fish, chicken, meat).

4.3 Effect of loan on Business assets
The regression result of the effect of loans on business assets is presented in Table 3.
Table 5: Regression Result of the Effect of Loans and Other Variables on Business Assets

<table>
<thead>
<tr>
<th>Business Assets</th>
<th>Coefficients</th>
<th>Robust Std. Err.</th>
<th>t</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7723.977</td>
<td>7683.318</td>
<td>1.01</td>
<td>0.316</td>
</tr>
<tr>
<td>Gender</td>
<td>-3016.973</td>
<td>3852.573</td>
<td>-0.78</td>
<td>0.434</td>
</tr>
<tr>
<td>Age</td>
<td>595.572</td>
<td>667.998</td>
<td>0.89</td>
<td>0.374</td>
</tr>
<tr>
<td>Education</td>
<td>-1521.542</td>
<td>1500.985</td>
<td>-1.01</td>
<td>0.312</td>
</tr>
<tr>
<td>Loan</td>
<td>0.5607699</td>
<td>0.1786336</td>
<td>3.14</td>
<td>0.002</td>
</tr>
<tr>
<td>Type</td>
<td>-3514.36</td>
<td>3706.557</td>
<td>-0.95</td>
<td>0.344</td>
</tr>
<tr>
<td>Profit</td>
<td>-23.44297</td>
<td>3.336258</td>
<td>-7.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Stock of Goods</td>
<td>-0.2060899</td>
<td>0.253237</td>
<td>-0.81</td>
<td>0.417</td>
</tr>
<tr>
<td>Stock of Goods Squared</td>
<td>2.78E-06</td>
<td>1.18E-06</td>
<td>2.37</td>
<td>0.019</td>
</tr>
<tr>
<td>Profit Squared</td>
<td>0.0074463</td>
<td>0.001335</td>
<td>5.58</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Observations = 212
F(9, 202) = 46.14
P-value = 0.000
R-squared = 0.3002
Root MSE = 25354

The estimated F-statistic is 46.14 with its p-value of 0.000 indicating that, at 5 percent level of significance, at least one of the independent variables significantly influences business asset. The coefficient of loan is 0.5607699 with p-value of 0.002< 0.05. This means that, loan size positively and significantly influences business assets. An assessment of profit on business assets shows the square of profit on business assets to be statistically significant given its coefficient of 0.0074463 and p-value of 0.0000. Profit however has a negative and significant impact on business assets.

As explained earlier, about 71.4 percent of the clients of the MFIs operated in trading activities and 23.5 percent provided various kinds of service (see sample characteristics). While some of the clients in trading activities invested little in business assets, quite a number of the clients also invested almost all their loan amounts in acquiring business assets such as containers and structures to display their goods, sewing machines, printers, driers, and equipment for various purposes. The evidence therefore suggests that the loan amounts had positive impact on the acquisition of business assets which enabled the growth of many of the small businesses. The findings are consistent with other studies (Owusu, 2011; Afrane, 2002).

4.4 Effect of loan on Employment

Table 6 illustrates the logistic regression results that examined the influence of loan size, gender, age and educational level of firm owners as well as the influence of business assets, stock and profit of firm on their employment of new people. Employment here is the dependent variable and it’s a dummy variable coded 1 if firm employed someone and 0 if otherwise. The main idea here is to find out whether the loans acquired helped the clients to employ more people. The results of the logistic regression presented in Table 6 shows the coefficient of loan to be positive (.0.00000261) but statistically insignificant, implying that the amount of loan received did not have any significant impact on the likelihood that the firm will employ after the loan. In other words, the probability that a firm will employ more people was not significantly influenced by the amount they received as loan. The results reflect the type of clients who do business with MFIs.

Table 6: Logistic Regression on the Effect of loan and Other Variables on Employment

<table>
<thead>
<tr>
<th>Employment</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>z</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.01536400</td>
<td>1.04375900</td>
<td>1.93</td>
<td>0.0530</td>
</tr>
<tr>
<td>Total loan</td>
<td>0.00000261</td>
<td>0.00002660</td>
<td>0.1</td>
<td>0.9220</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.13037590</td>
<td>0.39240500</td>
<td>-0.33</td>
<td>0.7400</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03529090</td>
<td>0.02013390</td>
<td>-1.75</td>
<td>0.0800</td>
</tr>
<tr>
<td>Education</td>
<td>-0.02369650</td>
<td>0.04798940</td>
<td>-0.49</td>
<td>0.6210</td>
</tr>
<tr>
<td>Business Assets</td>
<td>0.00000518</td>
<td>0.00000871</td>
<td>0.59</td>
<td>0.5520</td>
</tr>
<tr>
<td>Stock of goods</td>
<td>-0.00000982</td>
<td>0.00000484</td>
<td>-2.03</td>
<td>0.0420</td>
</tr>
<tr>
<td>Profit</td>
<td>0.00007710</td>
<td>0.00030230</td>
<td>0.26</td>
<td>0.7990</td>
</tr>
</tbody>
</table>

Observations = 130
LR Chi2 (7) = 4.65
P-Value = 0.7027
Pseudo R2 = 0.0263

The results show that all the independent variables failed to significantly influence employment except stock. The estimated coefficient was -0.00000982 with a p-value of 0.042. Thus, stock significantly influence employment at 5 percent level of significance. This result implies that, increase in stock reduces the likelihood of employment. It is expected that an increase in the stock of goods would increase the likelihood of employment.
The results however, did not reflect that. The study found out that while some of the clients of the MFIs who operate small businesses run their businesses single handedly, majority of them make good use of family members who are not paid wages, but are taken care of. It is however, interesting to note that some of the clients received loans to start their businesses. The loans therefore helped them to become self-employed.

Clients emphasized the important role played by MFIs in providing financial services to them. A client in the focus group discussion said it this way: “loans have contributed to the stability of my business. Although sales have fallen drastically the loans have helped to sustain my business, in view of this I will always go for loans.”

Another clients has this to say: “I was able to make some profit from the sale of pure water. If it had not been for the loans I would not have been able to buy the freezer and stock it with water so the loans really helped my business.”

Some of the clients however, complained about their inability to make regular repayment of loans. They attributed this problem to the high interest rates they pay on loans and the short-term within which they are to make repayment of the loan. Some of the MFIs also employ inflexible and harsh mode of collection, which to them, compounds the problem of irregular repayment of loans. Furthermore, clients are made to pay a penalty in the event of missing a day or two loan repayments as a result of low sales. Such a situation rather exacerbates their indebtedness.

Apart from the loan facilities provided to their clients, MFIs also provide saving facilities which enable clients to develop saving habits. It has been argued that savings play a crucial role in allowing the poor, many of whom operate micro and small businesses to take advantage of productive investment opportunities (Brau and Woller, 2004).

Table 7 presents the tabulation results on respondents’ saving behavior. The result showed that, 75.6 percent of the respondents save with the MFIs which gave them loans. About 24.4 percent however, indicated they do not save with the MFIs which gave them the loans. Some MFIs require their customers to participate in compulsory saving for about three to six months before loans are given to them. Studies have shown that compulsory savings teaches financial discipline and serve as an additional guarantee mechanism to ensure repayment of loans. (Brau and Woller, 2004; Ledgerwood, 1999).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save with MFI from which respondent borrow money</td>
<td>Yes</td>
<td>99</td>
<td>75.6</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>32</td>
<td>24.4</td>
</tr>
<tr>
<td>Compulsory savings</td>
<td>Yes</td>
<td>50</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>30</td>
<td>37.5</td>
</tr>
<tr>
<td>Voluntary Savings</td>
<td>Yes</td>
<td>54</td>
<td>71.1</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>22</td>
<td>28.9</td>
</tr>
</tbody>
</table>

Source: Author’s Construct, (2015)

The result showed that 62.5 percent of the respondents took part in the compulsory savings. Aside from the compulsory savings, 71 percent of the respondents also engaged in voluntary savings.

4.5 Trickledown effect of loans on the livelihood of clients

It is expected that the gains experienced by the clients through the acquisition of loans may have a trickledown effect on other areas of their lives.
In view of this the clients were asked to identify areas of their lives which have been improved as a result of access to loans. Ninety-one (91) percent of the clients indicated an improvement in their household income (Figure 1), 68 percent said the loans have helped in their children’s education, 52 percent said they have been able to buy some household assets with the profits from the business and 47 percent indicated they were able to access healthcare services as a result of increased profits which was made possible through the acquisition of loans.

5. Conclusion and Policy Implications

The study examined microfinance as a tool for small business growth in Urban Ghana. The effect of microfinance on the growth of small businesses through variables such as profits, stock of goods, business assets and employment levels were investigated. The findings suggest a positive and statistically significant impact of microfinance on the growth of small businesses through increase in profits, stock of goods and business assets while impact of microfinance on employment was positive but insignificant. The results confirmed the fact that most of the clients of the MFIs who operate micro and small businesses often engage family members to assist in the running of their business.

Access to loans also had a trickledown effect on their general livelihood. Most of the clients (91 percent) experienced an increased in their household income, 68 percent were able to take care of their children’s education, and 52 percent could buy household assets while 47 percent could access health care services.

The study however, found other factors that militate against the growth of small businesses and prevent them from realizing their full potentials. One of such factors is the high interest rates charged on loans. High interest rates increase the incidence of poor repayment of loans and consequently increase the default rate (Amonoo, Acquah and Asmah, 2003). A study by Aryeetey et al (1994) using an average annual interest rate of 19.5 percent which was below the market interest rate at the time shows that high interest rates was not a concern for small businesses since they considered the rates to be fair and reasonable (Amonoo, Acquah and Asmah, 2003). Others are also of the view that small businesses are capable of paying high interest rates and still make profits. However, evidence has shown that high interest rates affects the repayment of loans and is detrimental to investment and growth (Rittenburg, 1991, cited in Hoque and Hossain, 2014). Thus, the Government through the Bank of Ghana should take a closer look at the high monetary policy rate (prime rate) of 24 percent and review it since the interest rates charged by MFIs is typically influenced by the prime rate (and other factors). By making the borrowing rate (24 percent) attractive to the public, government, crowds out the funds in the system. Small businesses which are the backbone of many developing economies should therefore be supported to grow and not collapse as a result of high interest rates.

While credit is essential in promoting the growth of small businesses, credit alone is not enough. The study realized that most MFIs provide only financial services to their clients. Meanwhile, most of the clients do not keep proper accounts of their business. The need for providing other services such as training in book-keeping and business development by MFIs cannot be overemphasized. This is supported by empirical studies of Cook et al (2001) and Edgcomb (2002) who reported that business development training significantly improves micro and small enterprise performance and empowers the entrepreneur.
Another area that was highlighted in the findings is the inflexible nature of credit repayment employed by some MFIs. Most of the clients make daily loan repayments. However, a penalty is slated against clients who are unable to make consistent repayment due to sickness or poor sales. This further compounds their indebtedness. Furthermore, clients are expected to save for three to six months before qualifying for a loan. That is a disincentive to them and makes it difficult for them to access the loan at the time they need it.

Respondents also mentioned the negative effect the energy crisis is having on the growth of their business. Traders who deal in frozen goods (chicken, fish, meat, etc.) are the most affected. They end up disposing off their wares because most of them get rotten.

It must be noted however, that, despite the challenges mentioned above, MFIs have succeeded where commercial banks have failed in extending credit to the poor and in most cases the success of the small business enterprises depends heavily on the financial intermediation role played by the MFIs. Findings of this research have shown that although MFIs have the potential of helping to grow small businesses in urban Ghana there are other mitigating factors which have to be addressed to make microfinance more effective in Ghana. Policy interventions to promote microfinance would have to address the harsh effect of high interest rates on small businesses to ensure their growth and sustainability.

The risk of poor repayment could also be reduced if repayment amounts are matched with the repayment capacity of clients (Idolor and Imhanlahimi, 2011). This means MFIs should employ flexible loan repayment conditions such that clients who have the ability to make frequent payment of smaller amounts over a longer period should be allowed to do so in order to reduce the undue pressure often put on small businesses. The short-term period of about six months allowed for the repayment of loans should also be reconsidered. An extended period to at least a year would enable the clients to make enough profits and make the repayments at ease.

One innovation that has promoted microfinance is non-collateralized loans with increase in loan size conditional on loan repayment. An increase in loan size is likely to have a multiplier effect on the growth of the business through increase in profits and incomes of clients. Loan sizes that are too small may not have a significant impact on investment. Loan sizes should therefore be matched with the needs of the clients.

Since the provision of financial services such as credit alone is not enough, MFIs should also provide non-financial services such as training in book keeping and business development to ensure prudent financial management of clients’ businesses. MFIs should be able to design and deliver innovative products and services that meet the needs of small business operators to sustain and enhance the growth of their businesses. The Government of Ghana should also address the harsh economic environment by improving the energy sector, which is negatively affecting the growth of small businesses. Finally, since MFIs in Ghana are now regulated, an agenda for future research is to investigate whether regulation improves impact or not. Future research could also consider analyzing the challenges associated with the business of microfinance in helping to promote small business growth.

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